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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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Gerardus Maria Van Erp

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EXAMINER

GILBERT, WILLIAM V

ART UNIT

PAPER NUMBER

3635

NOTIFICATION DATE

DELIVERY MODE

11/06/2009

ELECTRONIC

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Notice of the Office communication was sent electronically on above-indicated "Notification Date" to the following e-mail address(es):

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Office Action Summary	Application No. 10/534,938	Applicant(s) VAN ERP, GERARDUS MARIA	
	Examiner William V. Gilbert	Art Unit 3635	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 17 August 2009.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-38 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-38 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date <u>7/23/09</u> . | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

This is a first action following a request for continued examination. Claims 1-38 are pending and examined.

Continued Examination Under 37 CFR 1.114

1. A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed on 17 August 2009 has been entered.

Claim Rejections - 35 USC § 103

2. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

The factual inquiries set forth in *Graham v. John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for

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establishing a background for determining obviousness under 35

U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

Claims 1-22, 24-27, 29-33 and 36-38 are rejected under 35 U.S.C. 103(a) as being unpatentable over Pollard (U.S. Patent No. 3,810,337) in view of Mirmiran (U.S. Patent No. 6,123,485) and Andersen (U.S. Patent No. 5,508,072).

Claim 1: Pollard discloses a hybrid structural module comprising a tubular composite member (Fig. 1: 10, 16), a filled resin system (38) located within the member and a steel member (28) located in the resin system, and the resin system binds the steel and tubular members together. While Pollard discloses that the tubular member can be made of numerous materials, including plastic (Col. 3, lines 38-45) it does not disclose the tubular member is fiber composite. Mirmiran discloses a fiber composite tubular member (Fig. 4b: 442) with reinforcing members and a cured substance. It would have been obvious at the time the invention was made to a person having ordinary skill in the art to make the tubular member from the fiber composite because

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the members are functionally equivalent and would perform equally as well.

The prior art of record discloses the claimed invention including a resin system, but it does not disclose the aggregate as claimed. Andersen discloses a polyurethane panel with light and heavy aggregates (Col. 11, lines 45-55; Col. 65: lines 10-15, respectively). It would have been obvious at the time the invention was made to a person having ordinary skill in the art to have the aggregates because these compositions are well known in the art in that the light aggregate aids in the production of an overall lighter structure and the heavy aggregate is known for aiding in the strengthening of the member, which would be a desired and predictable result with the member in Pollard in view of Mirmiran.

Claim 2: the limitation "pultruded" is considered product-by-process; therefore, determination of patentability is based on the product itself. See M.P.E.P. §2133. The patentability of the product does not depend on its method of production. If the product-by-process claim is the same as or obvious from a product of the same prior art, the claim is unpatentable even though the prior product was made by a different process. *In re Thorpe*, 777 F.2d 695 (Fed. Cir. 1985).

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Claim 3: the member is rectangular in cross section (as shown in Fig. 1).

Claim 4: the internal void is rectangular (as shown).

Claim 5: while the tubular member has fibers (see Mirmiran) with longitudinal axial fibers (Col. 2, lines 55-65), it does not disclose that the majority of the fibers are orientated in a longitudinal direction. It would have been obvious at the time the invention was made to a person having ordinary skill in the art to have this limitation because optimization of an invention will not support patentability of subject matter encompassed by the prior art unless there is evidence indicating such a limitation is critical. See M.P.E.P. §2144.05 "[W]here the general conditions of a claim are disclosed in the prior art, it is not inventive to discover the optimum or workable ranges by routine experimentation." *In re Aller*, 220 F.2d 454 (CCPA 1955) (Claimed process which was performed at a temperature between 40C and 80C and an acid concentration between 25% and 70% was held to be *prima facie* obvious over a reference process which differed from the claims only in that the reference process was performed at a temperature of 100C and an acid concentration 10%.)

Claim 6: the resin is polyurethane (Pollard, Col. 4, lines 1-5).

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Claim 7: the resin would adhere to both the tube and steel (as shown). This would occur due to the resinous quality of the polyurethane.

Claim 8: the aggregate is inert as best understood by the examiner.

Claim 9: the prior art of record does not disclose the compression strength of the aggregate. It would have been obvious at the time the invention was made to a person having ordinary skill in the art to have this limitation because optimization of an invention will not support patentability of subject matter encompassed by the prior art unless there is evidence indicating such a limitation is critical. See M.P.E.P. §2144.05 "[W]here the general conditions of a claim are disclosed in the prior art, it is not inventive to discover the optimum or workable ranges by routine experimentation." *In re Aller*, 220 F.2d 454 (CCPA 1955) (Claimed process which was performed at a temperature between 40C and 80C and an acid concentration between 25% and 70% was held to be *prima facie* obvious over a reference process which differed from the claims only in that the reference process was performed at a temperature of 100C and an acid concentration 10%.)

Claim 10: the prior art of record discloses the claimed invention including a resin system, but it does not disclose a

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light and heavy aggregate within the system. Andersen discloses a polyurethane panel with light and heavy aggregates (Col. 11, lines 45-55; Col. 65: lines 10-15, respectively). It would have been obvious at the time the invention was made to a person having ordinary skill in the art to have the aggregates because these compositions are well known in the art in that the light aggregate aids in the production of an overall lighter structure and the heavy aggregate is known for aiding in the strengthening of the member, which would be a desired and predictable result with the member in Pollard in view of Mirmiran.

Claims 11, 12 and 15: The prior art of record discloses the claimed invention except for the specific gravity of the light aggregate, the particle size and the compression strength, though these measurable properties are inherent features of such objects. It would have been obvious at the time the invention was made to a person having ordinary skill in the art to have this limitation because differences in these physical properties not support patentability of subject matter encompassed by the prior art unless there is evidence indicating such a limitation is critical. See M.P.E.P. §2144.05 "[W]here the general conditions of a claim are disclosed in the prior art, it is not inventive to discover the optimum or workable ranges by routine experimentation." *In re Aller*, 220 F.2d 454 (CCPA 1955) (Claimed

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process which was performed at a temperature between 40C and 80C and an acid concentration between 25% and 70% was held to be *prima facie* obvious over a reference process which differed from the claims only in that the reference process was performed at a temperature of 100C and an acid concentration 10%.)

Claim 13: the prior art of record disclose the claimed invention except for the percent volume of the aggregate. It would have been obvious at the time the invention was made to a person having ordinary skill in the art to have this limitation because differences in concentration will not support patentability of subject matter encompassed by the prior art unless there is evidence indicating such a limitation is critical. See M.P.E.P. §2144.05 "[W]here the general conditions of a claim are disclosed in the prior art, it is not inventive to discover the optimum or workable ranges by routine experimentation." *In re Aller*, 220 F.2d 454 (CCPA 1955) (Claimed process which was performed at a temperature between 40C and 80C and an acid concentration between 25% and 70% was held to be *prima facie* obvious over a reference process which differed from the claims only in that the reference process was performed at a temperature of 100C and an acid concentration 10%.)

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Claims 14 and 16: the light aggregate is glass spheres (Andersen: Col. 11, lines 45-55), which are center spheres as best understood by the examiner.

Claims 17, 18 and 20-22: the prior art of record discloses the claimed invention for specific gravity of the heavy aggregate, the volume of the aggregate or the particle size. It would have been obvious at the time the invention was made to a person having ordinary skill in the art to have this limitation because differences in such properties will not support patentability of subject matter encompassed by the prior art unless there is evidence indicating such a limitation is critical. See M.P.E.P. §2144.05 "[W]here the general conditions of a claim are disclosed in the prior art, it is not inventive to discover the optimum or workable ranges by routine experimentation." *In re Aller*, 220 F.2d 454 (CCPA 1955) (Claimed process which was performed at a temperature between 40C and 80C and an acid concentration between 25% and 70% was held to be *prima facie* obvious over a reference process which differed from the claims only in that the reference process was performed at a temperature of 100C and an acid concentration 10%.)

Claim 19: the heavy aggregate is basalt (Andersen: Col. 65, lines 10-15).

Claim 24: the steel member is a round bar (as shown).

Claim 25: steel has carbon in it, so the member is plain carbon steel as best understood by the examiner in light of the specification.

Claim 26: while as shown in Pollard the steel members can be made shorter than the tubular member, it does not disclose the limitation as claimed. It would have been obvious at the time the invention was made to a person having ordinary skill in the art as a matter of design choice to have the dimensions as claimed because applicant failed to state a criticality for the necessity of the limitation and the prior art of record is capable of being designed to meet the limitation as claimed. See MPEP 2144.04(IV)(A) citing *Gardner v. TEC Systems, Inc.*, 725 F.2d 1338 (Fed. Cir. 1984), the Federal Circuit held that, where the only difference between the prior art and the claims was a recitation of relative dimensions of the claimed device and a device having the claimed relative dimensions would not perform differently than the prior art device, the claimed device was not patentably distinct from the prior art device.

Claim 27: the tubular member as shown is completely filled with resin (note that all available space in the tube is filled.)

Claim 29: the steel member extends outwardly from the tubular member and the resin (as shown in Pollard: Fig. 1).

Claim 30: multiple steel members are present (as shown).

Claim 31: the multiple steel members are spaced substantially an equal distance away from each other (as shown).

Claim 32: the limitation "prestressed" is considered product-by-process; therefore, determination of patentability is based on the product itself. See M.P.E.P. §2133. The patentability of the product does not depend on its method of production. If the product-by-process claim is the same as or obvious from a product of the same prior art, the claim is unpatentable even though the prior product was made by a different process. *In re Thorpe*, 777 F.2d 695 (Fed. Cir. 1985). See however, where the tightening of nuts (Pollard: 36) results in a "prestressed" member. The limitation "prior to the hybrid member being formed" is considered product-by-process for the same reasons stated above.

Claim 33: Pollard discloses forming a tubular member (10, 16), locating at least one steel member (32) within the member, and locating a filled resin system (38) within the composite member to bind the steel member and tubular members together. While Pollard discloses that the tubular member can be made of numerous materials, including plastic (Col. 3, lines 38-45) it

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does not disclose the tubular member is fiber composite.

Mirmiran discloses a fiber composite tubular member (Fig. 4b: 4442) with reinforcing members and a cured substance. It would have been obvious at the time the invention was made to a person having ordinary skill in the art to substitute these materials because the members are functionally equivalent and would perform equally as well.

In addition, the prior art of record discloses the claimed invention including a resin system, but it does not disclose a light and heavy aggregate within the system. Andersen discloses a polyurethane panel with light and heavy aggregates (Col. 11, lines 45-55; Col. 65: lines 10-15, respectively). It would have been obvious at the time the invention was made to a person having ordinary skill in the art to have the aggregates because these compositions are well known in the art in that the light aggregate aids in the production of an overall lighter structure and the heavy aggregate is known for aiding in the strengthening of the member, which would be a desired and predictable result with the member in Pollard in view of Mirmiran.

Claims 36 and 37: the steel member would be lowered into the composite module and the resin would be poured into the module, though Pollard does not disclose the particular order of the sequence as claimed. It would have been obvious at the time

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the invention was made to a person having ordinary skill in the art to have the order as claimed because selection of any order of performing process steps is *prima facie* obvious in the absence of new or unexpected results. M.P.E.P. §2144.04(IV) (C) citing *In re Burhans*, 154 F.2d 690 (CCPA 1946).

Claim 38: the prior art of record discloses the claimed invention except for the expected strain of the steel member. It would have been obvious at the time the invention was made to a person having ordinary skill in the art to have this limitation because optimizing the strain of the steel member will not support patentability of subject matter encompassed by the prior art unless there is evidence indicating such a limitation is critical. See M.P.E.P. §2144.05 "[W]here the general conditions of a claim are disclosed in the prior art, it is not inventive to discover the optimum or workable ranges by routine experimentation." *In re Aller*, 220 F.2d 454 (CCPA 1955) (Claimed process which was performed at a temperature between 40C and 80C and an acid concentration between 25% and 70% was held to be *prima facie* obvious over a reference process which differed from the claims only in that the reference process was performed at a temperature of 100C and an acid concentration 10%.)

Claims 1 and 28 are rejected under 35 U.S.C. 103(a) as being unpatentable over Christian (U.S. Patent No. 5,253,458) in view of Mirmiran, Pollard and Andersen.

Claim 1: Christian discloses a hybrid structural module comprising a tubular member (12) and a filled system (14) located within the tubular member and elongated member in the system and the system binds the member to the tube. Christian discloses that the member is made of PVC, but not that it is a fiber composite member. Mirmiran discloses a filled tubular member (442) that is fibrous. It would have been obvious at the time the invention was made to a person having ordinary skill in the art to have this limitation because the two materials are functionally equivalent and would perform equally as well. Additionally, while Christian discloses the core is foam, it does not disclose the material is resinous. Pollard discloses a structural member with a resinous foam core. It would have been obvious at the time the invention was made to a person having ordinary skill in the art to substitute these materials because the two foams are functionally equivalent and would perform equally as well. Last, while the member discloses an electrical conduit (20), Christian does not disclose that the member is steel. It would have been obvious at the time the invention was made to a person having ordinary skill in the art to have the

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conduit as steel because it is well known in the art to have conduit made of steel for its strength and durability.

In addition, the prior art of record discloses the claimed invention including a resin system, but it does not disclose the aggregate as claimed. Andersen discloses a polyurethane panel with light and heavy aggregates (Col. 11, lines 45-55; Col. 65: lines 10-15, respectively). It would have been obvious at the time the invention was made to a person having ordinary skill in the art to have the aggregates because these compositions are well known in the art in that the light aggregate aids in the production of an overall lighter structure and the heavy aggregate is known for aiding in the strengthening of the member, which would be a desired and predictable result with the member in Pollard in view of Mirmiran.

Claim 28: while Christian does not disclose that the member is completely encompassed by the filled system (as shown), it would have been obvious at the time the invention was made to a person having ordinary skill in the art to have this limitation to avoid exposed conduit that would not be aesthetically pleasing.

Claim 23 is rejected under 35 U.S.C. 103(a) as being unpatentable over Pollard, Mirmiran and Andersen as applied to

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claim 10 above, and further in view of Colby (U.S. Patent No. 5,952,053).

Claim 23: the prior art of record discloses the claimed invention except for the addition of a thixotrope to the resin. Colby discloses a polyurethane material that contains a thixotrope (Col. 4, lines 30-40). It would have been obvious at the time the invention was made to a person having ordinary skill in the art to add this material because these materials are well known in the art for aiding in altering the viscosity of a polymeric material, and one of ordinary skill in the art would add such a material in order to achieve a desired viscosity when manufacturing the material.

Claims 34 and 35 are rejected under 35 U.S.C. 103(a) as being unpatentable over Pollard in view of Mirmiran and Andersen as applied to claim 33 above, and further in view of Welty (U.S. Patent No. 2,925,831).

Claims 34 and 35: the prior art of record discloses the claimed invention except that the member is abraded and cleaned or etched. Welty discloses a system where a member is cleaned and roughened (which is abrasion or etching) prior to attaching one object to another (Col. 3, lines 23-35). It would have been obvious at the time the invention was made to a person having

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ordinary skill in the art because it is well known in the art to rough a surface of an object prior to application of resinous substances so that proper bonding will occur between the two substances.

Response to Arguments

3. The following addresses applicant's remarks/arguments dated 17 August 2009:

Rebuttal of claims 2 and 32:

The examiner respectfully disagrees with applicant's arguments regarding the limitations "pultruded" and "pre-stressed". The examiner respectfully maintains that these are limitations drawn to product-by-process, and maintains the arguments with the rationale as set forth in the rejections. Please see the rejection above, where the examiner noted how the limitation "prestressed" is met.

Claim rejections - 35 USC §103:

Applicant's arguments have been fully considered but they are not persuasive. Regarding the argument that the Pollard reference (cited above) does not disclose a resin core, the examiner respectfully notes Col. 4, lines 35-40 of Pollard,

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which specifically states that the core is resin foam. This meets the limitation as provided in applicant's claim. Further, Anderson was incorporated to include the aggregate, and the examiner maintains that the combination of a resin core with the aggregate is known in the art.

In response to applicant's argument that the references fail to show certain features of applicant's invention, it is noted that the features upon which applicant relies (i.e., the materials science of the apparatus including its function under tension and compression; see pages 9-11 and 14-17 of applicant's arguments) are not recited in the rejected claim(s). Although the claims are interpreted in light of the specification, limitations from the specification are not read into the claims. See *In re Van Geuns*, 988 F.2d 1181, 26 USPQ2d 1057 (Fed. Cir. 1993).

Regarding the incorporation of the Andersen reference (Arguments: page 12), the examiner maintains that the use of Aggregates is known in such systems. The material in Pollard and Andersen is polymeric, so to add an aggregate would be well within the level of skill in the art for the reasons stated above.

In response to applicant's argument that the examiner's conclusion of obviousness is based upon improper hindsight

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reasoning (page 16), it must be recognized that any judgment on obviousness is in a sense necessarily a reconstruction based upon hindsight reasoning. But so long as it takes into account only knowledge which was within the level of ordinary skill at the time the claimed invention was made, and does not include knowledge gleaned only from the applicant's disclosure, such a reconstruction is proper. See *In re McLaughlin*, 443 F.2d 1392, 170 USPQ 209 (CCPA 1971).

Conclusion

4. Any inquiry concerning this communication or earlier communications from the examiner should be directed to William V. Gilbert whose telephone number is 571.272.9055. The examiner can normally be reached on Monday - Friday, 08:00 to 17:00 EST.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Richard Chilcot can be reached on 571.272.6777. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/W. V. G./
Examiner, Art Unit 3635
/Basil Katcheves/
Primary Examiner, Art Unit 3635